

Bristol Bay and the Proposed Pebble Mine

Facts and Circumstances

February 2020



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 - B. Economic Value of Bristol Bay Salmon
 - C. Pebble Has Not Earned the Trust of Alaskans
 - D. The Proposed Pebble Mine Project is Contrary to the Public Interest and thus, a 404 Permit Cannot Be Issued

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Pebble Should Not Receive A Clean Water Act 404 Permit

Bristol Bay supports the world's most valuable salmon fishery. It supports a subsistence culture that is thousands of years old, and commercial and sport fisheries that generate well over \$1.5 billion each year and which support tens of thousands of jobs in Bristol Bay and elsewhere. If carefully stewarded as it has been to date, this fishery can continue to provide benefits to the people of Bristol Bay, Alaska, and the nation essentially in perpetuity.

Pebble Limited Partnership's proposal to develop a massive mine in the headwaters of Bristol Bay is the antithesis of the safe and sustainable Bristol Bay salmon fishery. PLP's 20-year proposal has magnitudes greater impacts to anadromous fish habitat than any other mine project proposed or developed in Alaska, and likely the world. A conservative estimate of some of these impacts includes the intentional destruction of more than eight miles of anadromous waters, 22 miles of fish-bearing streams, with a total of over 105 miles of rivers and streams permanently lost. The 78-year mine plan, which is both reasonably foreseeable and essentially certain to occur should PLP gain approval for its economically-unjustified 20-year proposal, has between three and 10 times the already-huge impact of the 20-year proposal, with, among other impacts, over 300 miles of rivers and stream permanently lost.

Included within other highly-risky mine elements in its permit-related filings with the Corps is PLP's unprecedented water treatment proposal, which entails managing and treating more than 38 million gallons of water a day under the 20-year plan and over 52 million gallons a day under the 78-year plan. These numbers are between six and 18 times the amount of water handled by any other Alaska mine, and likely higher than any other mine in the world. Further, PLP's proposal involves more technically complex physical, chemical and biological water treatment plans than are used at other Alaska mines.

To compound matters, and despite literally having decades to prepare for permitting, PLP provides no engineering plans to support the water treatment and other key elements of its mining plans, instead relying on a "concept-level" presentation. And to avoid impacts, this plan would need to operate perfectly for what is essentially perpetuity. This is unrealistic in the extreme.

Further, support for Pebble among Bristol Bay stakeholders and Alaskans remains essentially at its all-time low point. This is true despite decades of PLP effort to achieve a social license to operate.

Risking Bristol Bay's salmon and all the values that it supports in favor of PLP's proposed mine is unacceptable and contrary to the public interest. Either the Corps should deny the permit or the EPA should exercise its Clean Water Act authority to prevent its issuance. Such a result would demonstrate that there is a discernable line between responsible and irresponsible development, and that the government will not cross it.

In short, PLP has had more than ample time to demonstrate to the people of Bristol Bay and Alaska that it could advance a mine plan that firmly and realistically protects Bristol Bay salmon from the risks of mining the Pebble ore deposit. PLP has failed to do so. Alaskans do not want this mine, and the federal government should not grant it a permit under the Clean Water Act.



I. Pebble Should Not Receive A Clean Water Act 404 Permit

- A. PLP's Proposal is Unprecedented and Unproven
- B. Economic Value of Bristol Bay Salmon
- C. Pebble Has Not Earned the Trust of Alaskans
- D. The Proposed Pebble Mine Project is Contrary to the Public Interest and thus, a 404 Permit Cannot Be Issued

PLP's Proposal is Unprecedented and Unproven

Pebble Limited Partnership (PLP) proposes a 20-year mine plan mine that would destroy far more anadromous waters and other rivers and streams than any other mine project proposed or developed in Alaska and likely the world. PLP also proposes a conceptual approach to water treatment that is unprecedented in Alaska, and appears to be unproven elsewhere in the mining world, in terms of technical complexity, engineering feasibility, and water quantity/quality. These attributes of the proposed Pebble mine are much higher for the 78 year mine.

The first chart compares the direct water and wetland impacts of the Pebble 20- and 78-year mines with other Alaska mines and other major development projects and proposals. The second chart compares Pebble's water treatment proposal to other Alaska mines.

Direct & Permanent Wetland and Fish Habitat Losses under Army Corps Clean Water Act Section 404 Permits			
	Salmon & Fish Streams	All Streams	Wetlands, Lakes, Ponds, & Marine Waters
Pebble Mine 20-Year Proposal	<ul style="list-style-type: none"> – More than 8 linear miles anadromous-cataloged streams destroyed¹ – More than 22 miles of fish-bearing streams destroyed.² 	<ul style="list-style-type: none"> – At least 105.8 linear miles destroyed.³ – Water flow and water quality impacts could affect 150 more miles of mainstem habitat.⁴ 	<ul style="list-style-type: none"> – At least 2,226 acres direct and permanent loss (plus 859 acres temporary impact and 2,019 indirect impacts from dust)⁵
Pebble Mine 78-Year Expanded Development Scenario	Over 43 miles anadromous-cataloged streams destroyed ⁶	339 linear miles destroyed ⁷	10,686 acres destroyed and up to 30,000 acres impacted ⁸
Greens Creek Mine	0 linear miles ⁹	Not quantified.	<ul style="list-style-type: none"> – Impacts through 2003 not quantified.¹⁰ – 10.2 additional acres (2003 tailings)¹¹ – 14.5 additional acres (2013 expansion)¹²
Fort Knox Mine	0 linear miles. Burbot and grayling habitat only. ¹³ No ADF&G anadromous waters catalog designations in or around mine site area. ¹⁴	Not quantified.	<ul style="list-style-type: none"> – 480 acres (1995 tailings construction)¹⁵ – 57.6 additional acres (2007 heap leach facility)¹⁶ – 15.64 additional acres (2011 TSF dam raise);¹⁷ 2 additional acres (2015 waste rock dump expansion);¹⁸ 0.97 additional acres (2018 phase 10 pit expansion)¹⁹
Kensington Mine	No permanent loss and Slate Creek dam not located in designated anadromous waters. ²⁰	Not quantified.	– 83.4 acres permitted ²¹
Pogo Mine	0 linear miles	Not quantified.	306 acres ²²
Red Dog Mine	Not quantified.	Not quantified.	<ul style="list-style-type: none"> – 1,402.6 acres (observed 1984-2009)²³ – 119 additional acres (2009 Aqqaluk expansion)²⁴
Oil & Gas Projects in Alaska			
Nanushuk	0 linear miles	0 linear miles	288 acres ²⁵
Point Thompson Development Project	0 linear miles salmon streams. ²⁶ Not quantified, but ROD discusses avoidance of work in anadromous fish habitat ²⁷	Not quantified in ROD, impacts not clear	267.1 acres ²⁸
Northstar Project	0 linear miles	0 linear miles	23.3 acres for Seal Island construction ²⁹
Liberty (Hilcorp)	0 linear miles	0 linear miles	88.1 acres ³⁰
ASRC Colville River Consolidated Gravel Material Site 1998-2018+	0 linear miles	0 linear miles	580 acres (cumulative, phases 1 through 3 from 1998-present and beyond) ³¹

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Water Treatment Capacities at Alaska Hardrock Mines

Mine	Gallons per Day	Process/Equipment	Pebble vs others
Pebble Mine Water Treatment Plants (WTPs) (proposed), 20 year mine	38,779,012 (combined based on two proposed WTPs) ³²	chemical precipitation, filtration, high-pressure membranes filtration, and biological selenium removal	--
Pebble Mine WTPs (proposed), 78 year mine	52,820,000 (approximate) ³³	unknown	--
Kensington Mine WTP	2,160,000 ³⁴	Co-precipitation	Pebble plans to process 18 times that of Kensington
Greens Creek Mine WTP	3,600,000 ³⁵	Co-precipitation	Pebble plans to process 10.8 times that of Greens Creek
Red Dog Mine WTP	6,624,000 ³⁶	Chemical precipitation	Pebble plans to process 5.9 times that of Red Dog
Donlin WTP (proposed)	6,840,000 (max. capacity) ³⁷	Oxidation, clarification, and filtration	Pebble plans to process 5.7 times that proposed for Donlin

¹ Pebble Draft EIS, Appendix I (Essential Fish Habitat Assessment), p. 68, Table 5-1 (46,836 linear feet, or 8.87 linear miles, Essential Fish Habitat permanent destroyed), *available at* <https://pebbleprojecteis.com/files/9a368031-5263-4f87-bf2d-f7da31c806a8>

² Preliminary Final EIS, Executive Summary, at p. 68.

³ Pebble Draft EIS, Executive Summary, pp. 60-61, Table ES-2.

⁴ Preliminary Final EIS, Executive Summary, at p. 69.

⁵ Preliminary Final EIS, Executive Summary, p. 82.

⁶ Preliminary Final EIS, Chapter 4.24, Table 4.24-4: Summary of Cumulative Effects for Fish Values ("At the mine site, an additional 35 miles of anadromous stream habitat would be lost in the SFK and UTC watersheds.").

⁷ Preliminary Final EIS, Executive Summary, at pp. 62 and 96.

⁸ Preliminary Final EIS, Executive Summary, at p. 62 and Chapter 4, Table 4.22-37: Summary of Cumulative Impacts to Wetlands and Other Waters under the Pebble Project Expansion Scenario.

⁹ USDA Forest Service, Record of Decision Greens Creek Mine Tailings Disposal Facility Expansion (Sept. 5, 2013), p. 34, *available at* http://dnr.alaska.gov/mlw/mining/largemine/greencreek/pdf/FEIS_ROD.pdf.

¹⁰ *Id.* at p. 3-114.

¹¹ USDA Forest Service, Record of Decision and Final EIS, Greens Creek Tailings Disposal (Nov. 2003), p. 4-37, *available at* <http://dnr.alaska.gov/mlw/mining/largemine/greencreek/pdf/feis1.pdf>.

¹² Army Corps of Engineers, signed authorization of work, Greens Creek Tailings Disposal (Feb. 11, 2015), *available at* <http://dnr.alaska.gov/mlw/mining/largemine/greencreek/pdf/poa1988-269m6.pdf>

¹³ ADF&G Technical Report No. 14-08, Arctic Grayling and Burbot Studies at the Fort Knox Mine (Oct. 2014), *available at* https://www.adfg.alaska.gov/static/home/library/pdfs/habitat/14_08.pdf

¹⁴ <https://www.adfg.alaska.gov/sf/SARR/ABC/index.cfm?ADFG=main.interactive>

¹⁵ SRK Consulting, Fort Knox and True North Mines Environmental Audits, submitted to Alaska DNR, DEC, DF&G (May 2012), p. 53-54, *available at* <http://dnr.alaska.gov/mlw/mining/largemine/fortknox/pdf/fgmiaudit2012.pdf>.

¹⁶ State of Alaska, DEC, Fish Creek FGMI Mining POA-1992-574-S, Section 401 Certificate of Reasonable Assurance (July 12, 2007), *available at* <http://dnr.alaska.gov/mlw/mining/largemine/fortknox/pdf/2/401scert.pdf>.

¹⁷ Army Corps of Engineers, Public Notice of Application for Permit, Fish Creek POA-1992-574-M19 (Sept. 29, 2010), *available at* http://dec.alaska.gov/Water/WPSdocs/POA-1992-574-M19_CERT.PDF

¹⁸ Army Corps of Engineers, POA-1992-574-M24 (issued May 2, 2014).

¹⁹ Fort Knox Mine Plan of Operations Amendment Request (Dec. 12, 2018), *available at* <http://204.89.222.126/mlw/mining/largemine/fortknox/pdf/2018/20149852poo-mod-request-15.pdf>

²⁰ Alaska Dept. of Fish and Game Fish Habitat Permit FH05-I-0050 (Aug. 28, 2009), p. 2, *available at* https://www.adfg.alaska.gov/static/home/library/pdfs/habitat/11_08b.pdf

²¹ Army Corps of Engineers, Public Notice of Application for Permit, Lynn Canal POA-1990-592-M6 (July 17, 2009), *available at* <http://dnr.alaska.gov/mlw/mining/largemine/kensington/pdf/kensuseacepnjul09.pdf>

²² Army Corps of Engineers, Public Notice of Application for Permit, Goodpaster River 1 (Sept. 19, 2003), p. 2, *available at* http://dnr.alaska.gov/mlw/mining/largemine/pogo/pogo9-18/pogo_feis_vol_II.pdf (appendix B).

²³ Red Dog Mine Extension – Aqqaluk Project Final SEIS, p. 3-100, *available at* <http://dnr.alaska.gov/mlw/mining/largemine/reddog/pdf/rdseis2009vol1.pdf>.

²⁴ Army Corps of Engineers, Public Notice of Application for Permit, Chukchi Sea POA-1984-12-M45 (Oct. 9, 2009), *available at* <http://dnr.alaska.gov/mlw/mining/largemine/reddog/pdf/rdseis2009vol2a.pdf>

²⁵ <http://www.nanushukeis.com/projectdescription.html>

²⁶ Army Corps of Engineers, Record of Decision, Point Thompson Development Project (Oct. 19, 2012), *available at* <https://www.poa.usace.army.mil/Portals/34/docs/regulatory/PtThomsonRODOct2012.pdf>

²⁷ *Id.* at p. 58.

²⁸ *Id.* at p. 2.

²⁹ Army Corps of Engineers, Record of Decision, Northstar (May 3, 1999), p. 22, *available at* https://www.boem.gov/uploadedFiles/BOEM/About_BOEM/BOEM_Regions/Alaska_Region/Leasing_and_Plans/Plans/1999-5-3_US_Corp_of_Engineers_Alaska_District_Record_of_Decision.pdf

³⁰ Army Corps of Engineers, Public Notice of Application for Permit, Beaufort Sea POA-2015-16 (Aug. 21, 2017), *available at* <https://www.poa.usace.army.mil/LinkClick.aspx?fileticket=wDoo3enUTMk%3D&portalid=34>



³¹ Army Corps of Engineers, Public Notice of Application for Permit, Colville River POA-1996-869-M11 (May 3, 2017), *available at* https://www.poa.usace.army.mil/Portals/34/docs/regulatory/publicnotices/POA-1996-869-M11.%20Colville%20River_PN.pdf?ver=2017-05-03-141233-113

³² Preliminary Final EIS, Executive Summary, at page 12 (two water treatment plans proposed to treat influent of 14 cfs and 46 cfs (60 cfs total) converts to 26,929.87 gallons per minute).

³³ Preliminary Final EIS, Chapter 4.1, Table 4.1-2: Assumptions for Pebble Project Expansion.

³⁴ Water Engineering Technologies, Inc., White Paper on Water Treatment Process, prepared for Pebble Limited Partnership (July 24, 2012), p. 5, *available at* <https://pebbleprojecteis.com/files/25246462-5d2d-47a2-8bfb-c8370b4a5481> (Kensington Mine process rate of 1,500 gallons per minute)

³⁵ *Id.* at p. 5 (Greens Creek Mine process rate of 2,500 gallons per minute)

³⁶ *Id.* (Red Dog Mine process rate of 4,600 gallons per minute).

³⁷ Donlin APDES permit, *available at* http://dec.alaska.gov/Water/WPSdocs/AK0055867_docs.pdf (based on 4,750 gallons per minute permitted capacity).

ECONOMIC BENEFITS OF THE BRISTOL BAY SALMON INDUSTRY



JOBS

- Approximately one-third of all working-age regional residents are directly employed in the industry
- Directly employs 14,765 people from nearly every U.S. state



VALUE

- The fishery generates total national economic output of \$1.23 billion per year
- Accounted for 31% of Alaska's total ex-vessel salmon value from 2013-2017, and 41% of total salmon permit value in 2017
- Fishery taxes and fees generated nearly \$25 million in state and local revenues in 2017.



SUSTAINABILITY

- This single fishery accounts for half of the world's commercial wild sockeye harvest
- Sockeye salmon have sustained the region's Alaska Native people for millennia and a thriving commercial fishery for 135 years and counting
- Produced a cumulative harvest of 2.1 billion salmon since the inception of the commercial fishery with an inflation-adjusted first wholesale value of \$34 billion.

Source: Economic Benefits of the Bristol Bay Salmon Industry, visit <https://bit.ly/2mMXNtB> to download the full report.

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REGIONAL BENEFITS

1,567

DIRECT IN-REGION JOBS

4,217

TOTAL AVERAGE JOBS
CREATED IN REGION

\$220

TOTAL REGIONAL LABOR
INCOME IN \$MILLIONS

\$19.7 MILLION

AVERAGE STATE AND LOCAL
REVENUES IN TAXES AND FEES
(2013-2017)

STATEWIDE BENEFITS

4,537

ALASKA RESIDENT
WORKERS

5,216

TOTAL AVERAGE JOBS
CREATED IN ALASKA

\$573

ECONOMIC OUTPUT
IN \$MILLIONS

NATIONAL ECONOMIC BENEFITS OF THE BRISTOL BAY SALMON INDUSTRY, 2013-2017 AVG.

----- in \$Millions -----

INDUSTRY SECTOR	DIRECT WORKERS	AVERAGE JOBS ¹	INCOME	OUTPUT
Commercial Fishing	8,201	2,411	\$126	\$188
Salmon Processing	5,821	1,335	\$70	\$244
Management & Tendering	744	162	\$8	-
Direct Upstream Benefits	14,765	3,908	\$204	\$432
Secondary Upstream Benefits ²	-	5,823	\$306	\$531
Total Upstream Benefits	-	9,731	\$510	\$962
Total Downstream Benefits ³	-	2,806	\$148	\$272
Total Benefits to U.S. Economy	-	12,537	\$658	\$1,235

**UPSTREAM ACTIVITIES, INCLUDING FISHERY MANAGEMENT,
HARVESTING, PROCESSING, AND SHIPPING SALMON OUT OF ALASKA
ACCOUNT FOR 78% OF TOTAL LABOR INCOME**

¹ Refers to the number of "average jobs" created by a given level of labor income for each sector/category (i.e. labor income divided by average annual earnings per wage and salary job in Alaska or U.S. average).

² Refers to multiplier effects of commercial fishing, primary processing, tender operations, and fishery management.

³ Includes direct impacts of secondary processors, food distributors, exporters & trading companies, retailers, and food service operators selling Bristol Bay sockeye, as well as related multipliers effects.

Note: Figures may not sum due to rounding.

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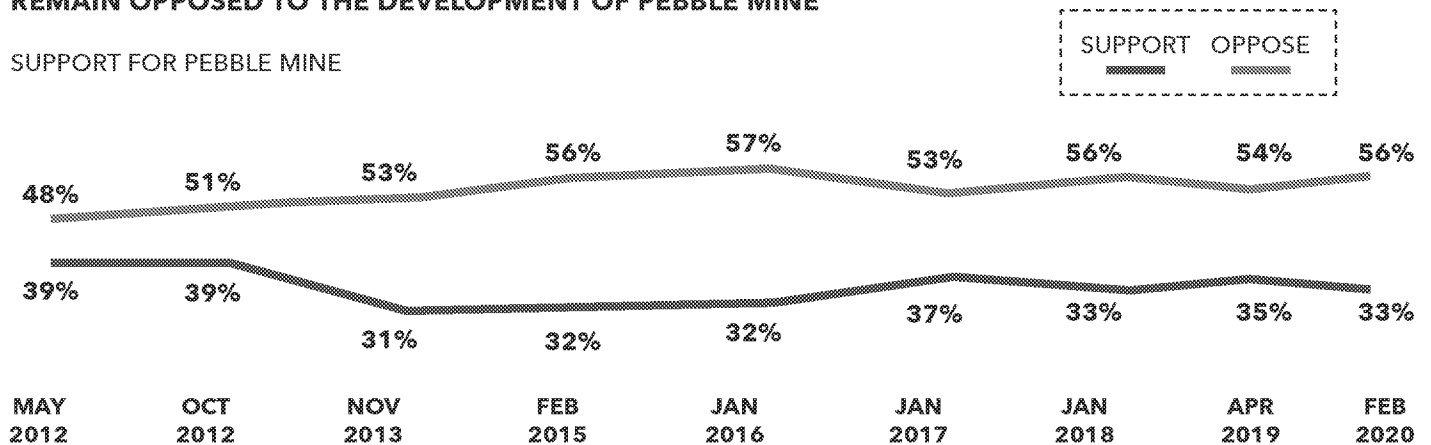
PEBBLE MINE POLLING UPDATE



ALASKANS

REMAIN OPPOSED TO THE DEVELOPMENT OF PEBBLE MINE

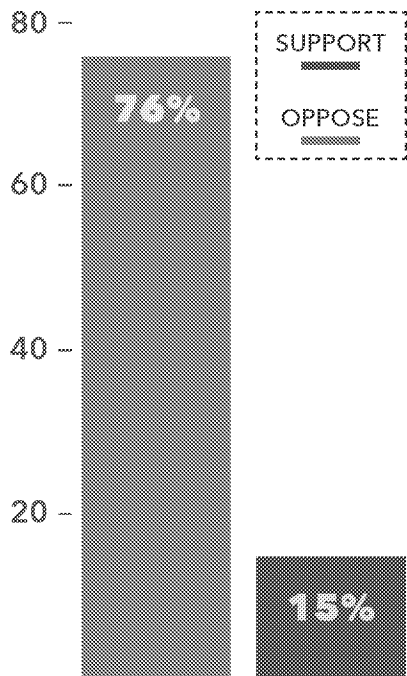
SUPPORT FOR PEBBLE MINE



BBNC SHAREHOLDERS

ARE FIRMLY OPPOSED TO THE PROJECT

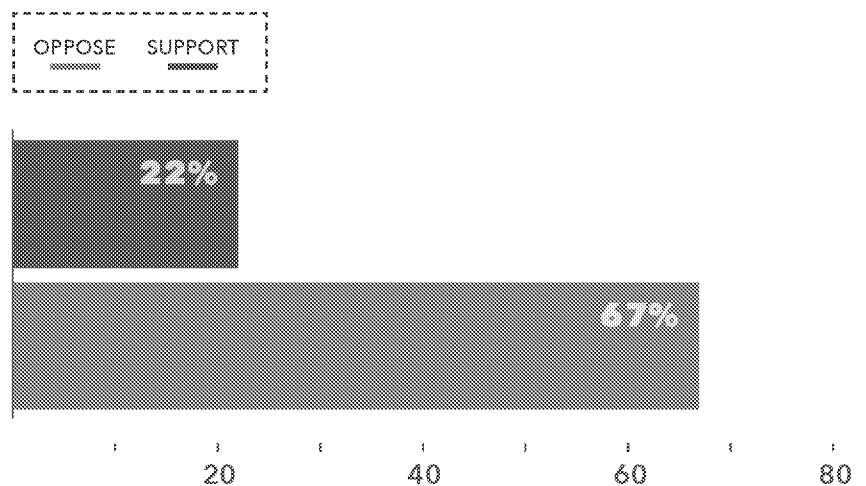
Do you generally support or oppose the proposed Pebble Mine?



ALASKANS

FIRMLY OPPOSE PEBBLE'S PLANS TO SECURE STATE FUNDS, LOANS, OR SUBSIDIES TO PAY FOR THE MINE:

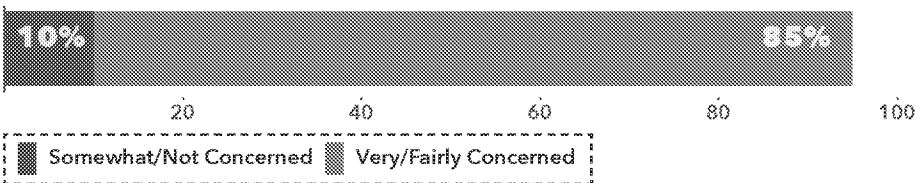
If Pebble Mine moves forward, the mining company will need to build new infrastructure like private roads and a gas pipeline. Would you support the use of state loans to pay for the infrastructure needed for the mine to operate?



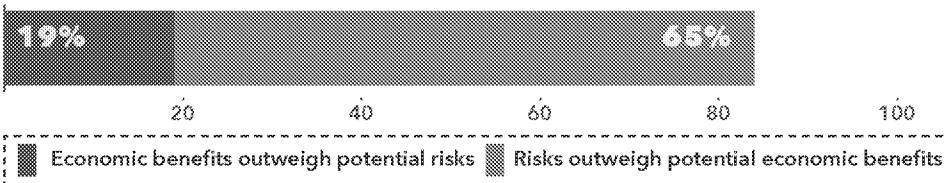
BBNC SHAREHOLDERS

ARE VERY CONCERNED ABOUT THE POTENTIAL RISKS POSED BY PEBBLE MINE, ARE SKEPTICAL OF THE POTENTIAL ECONOMIC BENEFITS, AND DO NOT HAVE CONFIDENCE THAT PLP WILL PROTECT THE BRISTOL BAY FISHERY

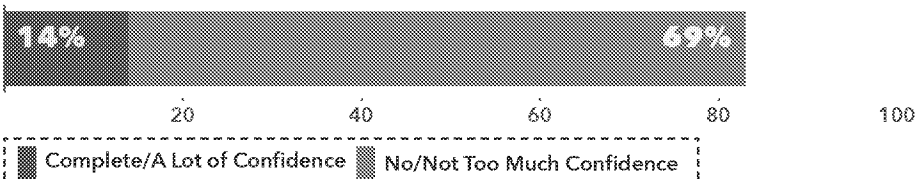
How concerned are you about potential risks posed by Pebble Mine to Bristol Bay and its salmon runs?



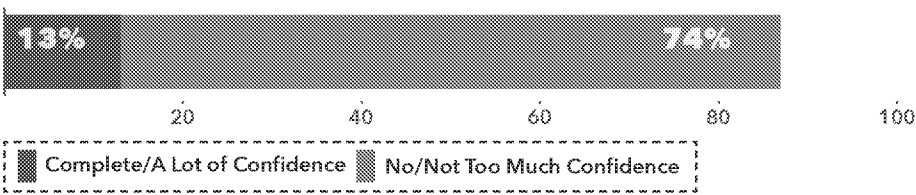
Thinking about the benefits and drawbacks of the Pebble Mine project, which of these statements comes closest to your opinion?



How much confidence do you have that Pebble Mine will deliver the economic benefits that Pebble Limited Partnership is claiming it will deliver?



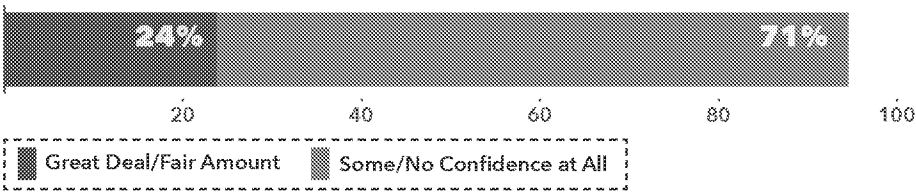
How much confidence do you have in Pebble Limited Partnership to protect the Bristol Bay fishery?



ALASKA VOTERS

HAVE SOME OR NO CONFIDENCE AT ALL THAT PEBBLE WILL BE ABLE TO KEEP ACIDIC AND TOXIC RUNOFF CONTAINED ON THE MINE SITE FOREVER

As is the case with all mines, mining the Pebble deposit will produce large quantities of waste rock that will have the potential to generate acidic and toxic runoff. This run-off will require monitoring, collection, and treatment systems that will need to operate successfully forever. How confident are you that Pebble will be able to keep this acidic and toxic runoff contained on the mine site forever? Would you say you have...



PEBBLE'S ENGAGEMENT EFFORTS HAVE FAILED TO REACH A MEANINGFUL NUMBER OF ALASKANS WITH ONLY

27%
of shareholders &

33%
of statewide voters recalling having seen or heard anything from Pebble Limited Partnership.

PEBBLE'S OUTREACH MADE ONLY

5%
of statewide voters more supportive of the project,

8%
actually becoming less supportive.

The Proposed Pebble Mine Project is Contrary to the Public Interest and by Regulation a 404 Permit Cannot Be Issued

The Army Corps must base its decision on whether to issue a Clean Water Act 404 Permit for the proposed Pebble Mine Project on a case-specific “evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest.”¹ The Corps’ decision is based on a “balancing process” of factors that should “reflect the national concern for both protection and utilization of important resources.”²

Factors the Corps must consider are described in the Public Interest Review regulations, summarized below.³ Consideration of these factors includes consideration of cumulative impacts, which, for the Pebble Mine Project, the Army Corps has determined to be a 78-year mine expanded development.

An analysis of some of the key factors, based on the record before the Army Corps and facts contained in the EIS, shows that the impacts of the proposed Pebble Mine Project are severe—indeed unprecedented for any hard rock mine in Alaska and likely the nation and perhaps the world. Any speculative benefits from the mine are outweighed by the impacts and risks the mine would have on Bristol Bay salmon and the culture, communities, and people that rely on them, and therefore the permit should be denied as contrary to the public interest.

Public Interest Factor	Applied to the Proposed Pebble Mine Project	Applied to the Expanded Development Scenario
<p>Effect on Wetlands 33 C.F.R. § 320.4(b)</p> <p>Wetlands are vital areas that “constitute a productive and valuable public resource, the unnecessary alteration or destruction of which should be discouraged as contrary to the public interest.”⁴</p> <p>“No permit will be granted which involves the alteration of wetlands identified as important,”⁵ such as “[w]etlands which serve significant natural biological functions, including food chain production, general habitat and nesting, spawning, rearing and resting sites for aquatic or land species,”⁶ unless the Army Corps concludes “that the benefits of the proposed alteration outweigh the damage to the wetlands resource.”⁷</p>	<p>The project poses massive direct, indirect, secondary, and cumulative impacts on wetlands and other waters.</p> <p>PLP’s mine plan will result in the direct and permanent loss of 2,226 acres of wetlands and other waters, 859 acres of temporary impacts to wetlands and other waters, and indirect impacts to 2,019 acres of wetlands and other waters.⁸</p> <p>It is not in the public’s interest to destroy these wetlands vital for the maintenance of the entire Bristol Bay ecosystem. Development of the Pebble Mine Project is not “necessary,” rather, it constitutes “unnecessary alteration or destruction of which should be discouraged as contrary to the public interest.”⁹</p>	<p>The cumulative impacts of the expanded development scenario at the mine site alone would result in the direct and permanent loss of more than 10,000 acres of wetlands¹⁰ and indirectly and cumulatively “affect runoff and substrate over a footprint area of approximately 30,000 acres.”¹¹</p> <p>Permanent impacts to wetlands associated with PLP’s proposal and the Pebble Project expansion “would occur across seven watersheds.”¹²</p>
<p>Fish and Wildlife 33 C.F.R. § 320.4(c)</p> <p>The Army Corps must review the proposed Pebble Mine Project “with a view to the conservation of wildlife resources by prevention of their direct and indirect loss and damage due to the activity proposed in a permit application.”¹³</p> <p>The Army Corps must consult with USFWS, NMFS, and ADF&G and “will give full consideration to the views of those agencies on fish and wildlife matters in deciding on the issuance, denial, or conditioning of individual or general permits.”¹⁴</p>	<p>The proposed Pebble Mine Project would result in:</p> <ul style="list-style-type: none"> • Permanent blockage and destruction of approximately 22 miles of fish-bearing streams.¹⁵ • Permanent blockage and destruction of more than 8 miles of cataloged anadromous waters.¹⁶ • Negative impacts on water quality in 150 miles of mainstem habitat downstream of the mine.¹⁷ • Permanent loss of 105.4 miles of rivers and streams. <p>USFWS, NMFS, and ADF&G have expressed serious concerns about the proposed project on fish, fish habitat, and wildlife, with USFWS recommending “that a permit not be issued for the project as currently proposed.”¹⁸</p>	<p>The cumulative impacts of the expanded development scenario described by the Army Corps would result in the direct and permanent loss of approximately 339 stream miles in the headwaters of Bristol Bay’s wild salmon fishery.¹⁹</p>



Public Interest Factor	Applied to the Proposed Pebble Mine Project	Applied to the Expanded Development Scenario
<p>Water Quality 33 C.F.R. § 320.4(d)</p> <p>The public interest review regulations require consideration of whether an activity requiring a 404 permit will comply with “applicable effluent limitations and water quality standards, during the construction and subsequent operation of the proposed activity. The evaluation should include consideration of both point and non-point sources of pollution.”²⁰</p> <p>Should the State issue certification of compliance with effluent standards under section 401 of the Clean Water Act, that certification “will be considered conclusive [...] unless the Regional Administrator, Environmental Protection Agency (EPA), advises of other water quality aspects to be taken into consideration.”²¹</p>	<p>PLP is proposing to treat more than 38 million gallons per day²² of contact water and surplus water stored in the proposed 18-billion-gallon capacity²³ Main Water Management Pond. PLP is proposing to treat by far the highest amount of water at any mine in Alaska, and likely the world.²⁴</p> <p>According to the Army Corps, the water PLP proposes to treat “would be elevated in several metals that would exceed WQC [water quality criteria].” The EIS discloses that the water PLP intends to treat contains “elevated levels of aluminum, arsenic, beryllium, cadmium, copper, lead, manganese, mercury, molybdenum, nickel, selenium (a metalloid), silver, and zinc in exceedance of the most stringent WQC.”²⁵</p> <p>No water quality certification has been provided by the State of Alaska and PLP has not submitted an application with the State detailing how it will treat 38 million gallons per day to meet State water quality standards. Meanwhile, the EPA has expressed serious concerns with the ground water and surface water quality impacts which would result from the operation of Pebble Mine.²⁶</p>	<p>The EIS predicts that “the increase in water required for production and treatment would increase by 39%.”²⁷ This would mean PLP would have to treat 52.82 million gallons per day in the expanded development scenario.</p> <p>In addition, according to the EIS, under the expanded development scenario, “PLP has not ruled out that cyanide could be used for additional gold recovery.”²⁸ Cyanide is highly toxic and has substantial environmental impacts and public health risks.²⁹</p>
<p>Historic, Cultural, Scenic, & Recreational Values 33 C.F.R. § 320.4(e)</p> <p>“Full evaluation of the general public interest requires that due consideration be given to the effect” of the proposed Pebble Mine Project on “recognized historic, cultural, scenic, conservation, recreation, or similar values.”³⁰ Army Corps permits must “avoid significant adverse effects on the values or purposes” of these resources.³¹</p>	<p>The Bristol Bay watershed is home to a wide array of world-renowned historic, cultural, scenic, conservation, and recreational values. These attributes of the Bristol Bay watershed serve the public interest, as the basis of a sustainable, diverse, and important economy and way of life.</p> <p>Based on the importance of these values, the Corps must “avoid significant adverse effects” to these resources as required by the regulations.</p>	<p>PLP’s direct footprint will increase to approximately 30,000 acres across seven watersheds.</p>
<p>Consideration of Property Ownership 33 C.F.R. § 320.4(g)</p> <p>According to the public interest regulations, a 404 permit “does not convey a property right, nor authorize ...invasion of rights or any infringement of Federal, state or local laws or regulations.”³²</p>	<p>Private property is implicated in PLP’s proposal and in all alternatives analyzed in the EIS. PLP plans to locate a natural gas pipeline and road quarries/materials sites on subsurface estate owned by Bristol Bay Native Corporation (BBNC). The EIS alternatives also locate roads and ferry docks on surface estate owned by Pedro Bay Corporation and BBNC north of Iliamna Lake.</p> <p>The EIS acknowledges that landowner permissions are required to use subsurface and surface estate. BBNC and Pedro Bay Corporation have formally rejected the use their private surface and subsurface estates.</p>	<p>The EIS discloses that PLP’s Expanded Development Scenario would require a road and pipelines along the north shore of Iliamna Lake,³³ across private property of Pedro Bay Corporation and BBNC, which have denied PLP permission to use their surface and subsurface estates.</p>



Public Interest Factor	Applied to the Proposed Pebble Mine Project	Applied to the Expanded Development Scenario
<p>Other Federal, State, and Local Requirements 33 C.F.R. § 320.4(j)</p> <p>The public interest review regulations state that “Processing of an application for a DA permit normally will proceed concurrently with the processing of other required Federal, state, and/or local authorizations or certifications.”³⁴ An exception to this normal process exists if there are “significant issues of overriding national importance.”³⁵</p>	<p>The Corps is proceeding with of its decision process for PLP’s 404 permit application without concurrently processing other required applications for Federal permits (from Coast Guard and Bureau of Safety and Environmental Enforcement), state permits and approvals (various DNR, DEC, and ADF&G permits, certifications, and authorizations), and local authorizations or certifications (such as borough conditional use permits). The Corps is thus analyzing a partial and admittedly conceptual project proposal and is not considering the full range of impacts nor the details of the proposal.</p> <p>Moreover, there are no “significant issues of overriding national importance” as required by the regulations to ignore the Corps’ obligation to concurrently process all federal, state, and local approvals. By doing this, the Corps own 404 permit application lacks the necessary details for review.</p>	
<p>Safety of Impoundment Structures 33 C.F.R. § 320.4(k)</p> <p>When reviewing a project with impoundment structures under the public interest regulations, the Army Corps must ensure “that all impoundment structures are designed for safety” and may do so by “requiring non-Federal applicants [...] to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons.”³⁶ Moreover, the Army Corps may order that a design “independently reviewed (and modified as the review would indicate) by similarly qualified persons.”³⁷</p>	<p>PLP is planning to construct 7 major embankments and impoundment structures at the headwaters of Bristol Bay:</p> <p><u>Bulk TSF – Two Dams:</u> Main = 545 feet high South = 300 feet high</p> <p><u>Pyritic TSF – Three Dams:</u> North = 335 feet high South = 215 feet high East = 225 feet high</p> <p><u>Main WMP – One Dam</u> = 190 feet high</p> <p><u>Open Pit WMP – One Dam</u> = 100 feet high</p> <p>PLP has not submitted any of its detailed state dam safety permit applications, as the public interest regulations say are necessary for analyzing safety of design. PLP has not submitted any of its dam designs for independent review, despite its CEO’s “commitment” to do so.³⁸ Given the record of impoundment failures associated with mining impoundment structures, the risks of the proposed Pebble mine Pebble to salmon, and as supported by PLP itself, an independent review of the design is important to inform the public interest review.</p>	<p>The Army Corps has not required any details on the additional impoundment structures that would be built or expanded/raised under PLP’s expanded development scenario. PLP would expand the Bulk TSF to 7,130 acres (11.14 square miles) and the Pyritic TSF to 2,597 acres (4.06 square miles) and would need to raise the 5 tailings dams accordingly.³⁹ PLP would also add two additional dams to impound two more water collection and management ponds.⁴⁰</p>
<p>Floodplain Management 33 C.F.R. § 320.4(l)</p> <p>As noted by the public interest review regulations, “[f]loodplains possess significant natural values and carry out numerous functions important to the public interest.”⁴¹</p> <p>The Army Corps is directed “as part of their public interest review, [to] avoid to the extent practicable, long and short term significant adverse impacts associated with the occupancy and modification of floodplains, as well as the direct and indirect support of floodplain development whenever there is a practicable alternative.”⁴²</p>	<p>The Nushagak and Kvichak River watersheds contain important floodplain habitat. EPA found that for streams in these watersheds with less than 1% gradient, “55% have high floodplain potential” and that the broad geomorphic and hydrologic characteristics and floodplains and low gradient streams supports “habitat highly suitable for fishes such as Pacific salmon, Dolly Varden, and rainbow trout.”⁴³</p> <p>The proposed Pebble Mine Project during regular operations would fill and directly destroy 2,226 acres of wetlands, more than 105 miles of streams, dewater another 2,019 or more acres of wetlands, and fragment streams and floodplains with more than 86 road crossings. These impacts would have vast long and short term negative consequences to</p>	<p>The cumulative impacts of the expanded development scenario at the mine site alone would result in the direct and permanent loss of more than 10,000 acres of wetlands⁴⁴ and indirectly and cumulative “affect runoff and substrate over a footprint area of approximately 30,000 acres.”⁴⁵</p> <p>Permanent impacts to wetlands associated with PLP’s proposal and the Pebble Project expansion</p>



Public Interest Factor	Applied to the Proposed Pebble Mine Project	Applied to the Expanded Development Scenario
	the floodplains of Bristol Bay, including the permanent modification and destruction of floodplains supporting fish habitat.	"would occur across seven watersheds ⁴⁶ and would result in the direct and permanent loss of approximately 339 stream miles in the headwaters of Bristol Bay's wild salmon fishery. ⁴⁷
<p>Water Supply & Conservation 33 C.F.R. § 320.4(m)</p> <p>The Corps public interest review regulations note that "[w]ater is an essential resource, basic to human survival, economic growth, and the natural environment."⁴⁸ "Water conservation requires the efficient use of water resources in all actions which involve the significant use of water or that significantly affect the availability of water for alternative uses."⁴⁹</p>	<p>PLP's proposal would require the collection, diversion, and treatment of massive amounts of water—more than 38 million gallons per day—in the pristine headwaters of Bristol Bay. This collection and diversion of water from its natural use (in stream) towards an alternative use (mining) is not in the public's interest.</p>	<p>The EIS predicts that "the increase in water required for production and treatment would increase by 39%."⁵⁰ This would mean PLP would have to treat 52.82 million gallons per day in the expanded development scenario.</p>
<p>Economics 33 C.F.R. § 320.4(q)</p> <p>The public interest regulations direct the Corps to consider project economics in the context of the overall benefit to the public. The regulations direct that "the district engineer in appropriate cases, may make an independent review of the need for the project from the perspective of the overall public interest. The economic benefits of many projects are important to the local community and contribute to needed improvements in the local economic base, affecting such factors as employment, tax revenues, community cohesion, community services, and property values."⁵¹</p>	<p>When considering the economics costs and benefits of the proposed Pebble Mine Project as a mining prospect located at the headwaters of the world's most prolific salmon commercial fishery, the overall public interest weighs very heavily against issuance of a 404 permit. The direct economic consequences of the mining proposal would be a net negative to the region while meanwhile doing very little to serve the U.S. or global economy.</p> <p>Bristol Bay is heavily dependent on clean, pristine waters for its healthy salmon run. These waters, wetlands, and pristine ecosystem in turn support:</p> <ul style="list-style-type: none"> • A salmon commercial fishery valued at \$1.5 billion in annual economic activity and supporting nearly 20,000 fishery jobs⁵² • Sport fishing and hunting trips (more than 29,000 taken annually) generating an additional \$68.7 million in direct expenditures and more than 800 jobs annually (from employment of lodge owners, guides, pilots, etc).⁵³ Approximately 80 businesses and 400 guides operate in Bristol Bay.⁵⁴ • Wildlife viewing and tourism generating an additional \$104.4 million in direct expenditures annually⁵⁵ • Subsistence economy <p>Considering all sectors (commercial, sport, and subsistence fishing; sport and subsistence hunting; and non-consumptive recreation), EPA found that "the Bristol Bay watershed's ecological resources generated nearly \$480 million in direct economic expenditures in 2009 and provided employment for over 14,000 full- and part-time workers."⁵⁶</p> <p>These ecological services and the economies they support would be negatively impacted if the</p>	

Public Interest Factor	Applied to the Proposed Pebble Mine Project	Applied to the Expanded Development Scenario
	<p>proposed Pebble Mine Project and its associated infrastructure were approved by the Corps.</p> <p>PLP has failed to provide an economic feasibility study of its proposed mine and as such it cannot calculate with accuracy potential profits and benefits. Therefore, as disclosed by its parent company, any information that PLP touts as the economic benefits of the mine are “indicative only,” and not based on a proven economic design.⁵⁷ PLP’s parent company, Northern Dynasty Minerals, has a long and failed history of major mining industry partners and investors, which provides further relevant context.</p>	

¹ 33 C.F.R. § 320.4(a)(1).

² 33 C.F.R. § 320.4(a)(1).

³ 33 C.F.R. § 320.4(a)(1).

⁴ 33 C.F.R. § 320.4(b)(1).

⁵ 33 C.F.R. § 320.4(b)(4).

⁶ 33 C.F.R. § 320.4(b)(2)(i).

⁷ 33 C.F.R. § 320.4(b)(4).

⁸ Preliminary Final EIS, Executive Summary, at page 82.

⁹ 33 C.F.R. § 320.4(b)(1).

¹⁰ Preliminary Final EIS, Chapter 4, Table 4.22-37: Summary of Cumulative Impacts to Wetlands and Other Waters under the Pebble Project Expansion Scenario.

¹¹ Preliminary Final EIS, Executive Summary, at page 62.

¹² Preliminary Final EIS, Executive Summary, at page 96.

¹³ 33 C.F.R. § 320.4(c).

¹⁴ 33 C.F.R. § 320.4(c).

¹⁵ Preliminary Final EIS, Executive Summary, at page 68.

¹⁶ Preliminary Final EIS, Executive Summary, at page 68.

¹⁷ Preliminary Final EIS, Executive Summary, at page 69.

¹⁸ Letter from USFWS to Army Corps (July 1, 2019), Re: Pebble Mine Project, U.S. Fish and Wildlife Service Comments Pursuant to the 404(q) Memorandum of Agreement.

¹⁹ Preliminary Final EIS, Executive Summary, at page 62 and 96.

²⁰ 33 C.F.R. § 320.4(d).

²¹ 33 C.F.R. § 320.4(d).

²² Preliminary Final EIS, Executive Summary, at page 12 (two water treatment plans proposed to treat influent of 14 cfs and 46 cfs (60 cfs total) converts to 26,929.87 gallons per minute, or 38,779,012.80 gallons per day).

²³ See Pebble Project Description (Dec. 2019), at page 28 (describing the Main Water Management Pond with an approximate capacity of 2,450 million cubic feet, converts to 18.33 billion gallons).

²⁴ See attached fact sheet “PLP’s Proposal is Unprecedented and Unproven. According to PLP’s consultants “high-capacity WTPs [such as the one proposed] are in use around the world, *albeit not in the mining industry.*” Water Engineering Technologies, Inc, White Paper on Water Treatment Processes, prepared for PLP (July 24, 2012), at page 8, available at <https://pebbleprojecteis.com/files/25246462-5d2d-47a2-8bfb-c8370b4a5481>.

²⁵ Preliminary Final EIS, Executive Summary, at page 104.

²⁶ EPA Letter to the Army Corps on the Draft EIS (July 1, 2019) (“the combined impacts of the project could result in an exceedance of water quality standards and violations of the CWA.”).

²⁷ Preliminary Final EIS, Chapter 4.1, Table 4.1-2: Assumptions for Pebble Project Expansion.

²⁸ Preliminary Final EIS, Chapter 4.1, Table 4.1-2: Assumptions for Pebble Project Expansion

²⁹ See <https://earthworks.org/issues/cyanide/>.

³⁰ 33 C.F.R. § 320.4(e).

³¹ 33 C.F.R. § 320.4(e).

³² 33 C.F.R. § 320.4(g).

³³ Preliminary Final EIS, Executive Summary, at page 96.

³⁴ 33 C.F.R. § 320.4(j)(1).

³⁵ 33 C.F.R. § 320.4(j)(4).

³⁶ 33 C.F.R. § 320.4(k).

³⁷ 33 C.F.R. § 320.4(k).

³⁸ “To ensure that Pebble meets the standards and expectations of Alaskans, PLP CEO Tom Collier has committed to submit the engineering design for the project’s tailings storage facility to an independent review prior to initiating permitting.” PLP News Article (February 12, 2015), available at <https://pebblepartnership.com/press-releases/2015/2/12/mount-polley-mine-update>.

³⁹ RFI 062 (Sept. 6, 2018), available at <https://pebbleprojecteis.com/files/7375565c-9af9-4943-ac70-1f9fbbadfa42>.

⁴⁰ RFI 062 (Sept. 6, 2018).

⁴¹ 33 C.F.R. § 320.4(l).

⁴² 33 C.F.R. § 320.4(l)(2).

⁴³ BBWA at page 3-27.

⁴⁴ Preliminary Final EIS, Chapter 4, Table 4.22-37: Summary of Cumulative Impacts to Wetlands and Other Waters under the Pebble Project Expansion Scenario.



⁴⁵ Preliminary Final EIS, Executive Summary, at page 62.

⁴⁶ Preliminary Final EIS, Executive Summary, at page 96.

⁴⁷ Preliminary Final EIS, Executive Summary, at page 62 and 96.

⁴⁸ 33 C.F.R. § 320.4(m).

⁴⁹ 33 C.F.R. § 320.4(m).

⁵⁰ Preliminary Final EIS, Chapter 4.1, Table 4.1-2: Assumptions for Pebble Project Expansion.

⁵¹ 33 C.F.R. § 320(q).

⁵² See Wink Research & Consulting, *Economic Benefits of the Bristol Bay Salmon Industry* (July 2018) and Knapp, Gunnar, et al., *The Economic Importance of the Bristol Bay Salmon Industry* (April 2013).

⁵³ BBWA at page 5-26.

⁵⁴ BBWA at page 5-27.

⁵⁵ BBWA at page 5-26.

⁵⁶ BBWA at page ES-5.

⁵⁷ Northern Dynasty Minerals, Pebble Project Factsheet (Feb. 2020), available at <https://www.northerndynastyminerals.com/investors/factsheet/> ("The information [on jobs, GDP contribution, and royalties and taxes] in this section is indicative only [...] [and] is intended to provide information about general economic effects/contribution ...")



Pebble Cannot Be Granted A Permit Based On The Current Record

Pebble Limited Partnership's proposal to mine the Pebble ore deposit has changed considerably since PLP filed its Clean Water Act permit application with the U.S. Army Corps of Engineers, including after the last opportunity for public input to the Corps on PLP's proposal and its likely impacts. The Corps cannot legitimately grant PLP a permit without the opportunity for the public to provide input based on this significantly changed record.

Changes to PLP's proposal are reflected in PLP's multiple modifications to its project description and revisions to its permit application. They are also reflected in PLP's responses to over 150 formal Requests for Information which the Corps has sent since the last time the Corps sought input on the project, which occurred upon release of the Draft Environmental Impact Statement. They are further reflected in the more than 45,000 pages of additional documentation in the Corps' project file since the release of the Draft EIS.

As one example, since the Corps released the Draft EIS, the direct impacts on Bristol Bay rivers and streams of the 20 year mine proposal have increased over 25%, from 81.1 miles to over 105 miles. This change is akin to the distance between downtown Anchorage and Eklutna, or the United States Capitol Hill and Chesapeake Bay. As another example, the new information includes at least thirty reports related to dam design and water management that were authored by firms that worked on the Mt. Polley dam design and water treatment plans. After the Mt. Polley disaster, PLP loudly committed to submit its dam engineering details to independent review before permitting, a commitment which it failed to honor.

What is also remarkable about the current record, especially when one considers the decades that PLP has had to prepare its permitting proposal, are the multiple examples of fundamental information identified by expert reviewers that is missing from the record, and PLP's refusal to provide that information. For example, PLP presents only a "concept-level" approach to control mine tailings. AECOM, which is the contractor hired by PLP to assist the Corps in preparing the necessary impact analyses, decried the "uncertainties" in PLP's proposal and expressed "concern that some and perhaps all of the entire centerline part of the [tailings dam] main embankment ... could slide into potentially undrained tailings and have consequent effects in a downstream direction." In other words, with what is now known about PLP's dam design, its own contractor thinks the dam may fail.

PLP seeks to excuse its failure to provide this information by deferring to the State of Alaska permitting process, where it says it will provide detailed design plans. This approach undercuts the roles of the Clean Water Act and National Environmental Policy Act in ensuring that federal permit decisions are made only after robust analysis, informed by public input, of the likely impacts of the proposed mine. This situation also cuts against the State of Alaska's Large Mine Project Permitting Team approach, that ensures that federal and state permits are considered concurrently due to the greater effectiveness and efficiency of such an approach. Indeed, the State of Alaska has stated that mines like Pebble "undoubtedly" will undergo changes during the permitting process, raising further question about the point of the Corps' going-it-alone analysis of an incomplete proposal from PLP.

To reiterate, the Corps cannot legitimately grant PLP a permit without the opportunity for the public to provide input based on the significantly changed record.



**II. PLP Cannot Be Granted a Permit Based on the Current Record;
A New Draft EIS is Needed**

- A. Legal Background: Science and Public Participation
- B. Project Changes since the Release of the Draft EIS
- C. New Information submitted by PLP after the Draft EIS and Evading Public Review
- D. Critical Data, Missing Detailed Plans, and Analysis that PLP has Yet to Provide
- E. The Tailings Dams Designs Example
- F. The Role of State Permitting to Provide Comprehensive Review

Legal Background: Science and Public Participation

The National Environmental Policy Act (NEPA)

NEPA is the overarching national charter used by Federal agencies to disclose and evaluate environmental effects, and thereby protect the quality of the human environment. Its purposes include eliminating, minimizing, and compensating for adverse effects and damage to the environment, which it does through a process that relies for its integrity on sound, up-to-date science, and meaningful public participation before decisions are made.

Science: The information included in an Environmental Impact Statement (EIS) must “be of a high quality,” and allow for “[a]ccurate scientific analysis, expert agency comments, and public scrutiny.”¹ An agency must “not act on incomplete information, only to regret its decision after it is too late to correct.”²

Public Participation: “Informed public participation in reviewing environmental impacts is essential to the proper functioning of NEPA.”³ An EIS that fails to provide the public meaningful opportunities to review and understand the agency’s proposal at key points in a Federal agency’s evaluation and decision making process, the methodology used, and how potential environmental impacts were analyzed violates NEPA.⁴

Draft EIS standards: When an agency publishes a draft EIS, it “must fulfill and satisfy to the fullest extent possible the requirements established for final statements....”⁵ “If a draft [EIS] is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft”⁶ NEPA also requires agencies to “prepare supplements to [a draft EIS] if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.”⁷ Courts have held that “a post-EIS analysis—conducted without any input from the public—cannot cure deficiencies in an EIS.”⁸

The Clean Water Act

The primary purpose of the Clean Water Act is to restore and maintain the physical, biological, and chemical integrity of our nation’s waters. Under Section 404 of the Act, the U.S. Army Corps of Engineers regulates the discharge of dredge and fill material into waters of the United States to meet this purpose.

Science: A permit shall not be issued if “[t]here does not exist sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with” the Act’s Section 404 guidelines.⁹ When a project is so speculative that alternatives and avoidance and minimization cannot be meaningfully addressed, the application, any NEPA document, and related environmental compliance information may be considered incomplete.¹⁰

Public Notice: “Public notice is the primary method of advising interested parties of the proposed activity for which a permit is sought, and of soliciting comments and information necessary to evaluate the probable impact on the public interest. The notice must, therefore, include sufficient information to give a clear understanding of the nature and magnitude of the activity to generate meaningful comment.”¹¹ The Corps “will issue a supplemental, revised, or corrected public notice if in [its] view there is a change in the application data that would affect the public’s review of the proposal.”¹²

Public Participation: “Public participation in the ... enforcement of any regulation ... plan, or program ... shall be provided for, [and] encouraged....”¹³



¹ 40 CFR § 1500.1(b).

² *Marsh v. Or. Natural Res. Council*, 490 U.S. 360, 371 (1989).

³ *League of Wilderness Defenders/Blue Mountain Biodiversity Project v. Connaughton*, 752 F.3d 755, 761 (9th Cir. 2014)).

⁴ See e.g., *California ex rel. Lockyer v. U.S. Forest Service*, 465 F. Supp. 2d 942, 948-50 (N.D. Cal. 2006); see also *Idaho ex rel. Kempthorne v. U.S. Forest Service*, 142 F.Supp.2d 1248, 1261 (D. Idaho 2001) (“NEPA requires full disclosure of all relevant information before there is meaningful public debate and oversight.”).

⁵ 40 C.F.R. § 1502.9(a).

⁶ 40 CFR § 1502.9(a).

⁷ 40 CR § 1502.9(c)(1)(ii).

⁸ *Great Basin Resource Watch v. BLM*, 844 F.3d 1095, 1104 (9th Cir. 2016) *citing* *Ctr. for Biological Diversity v. U.S. Forest Serv.*, 349 F.3d 1157, 1169 (9th Cir. 2003).

⁹ 40 C.F.R. § 230.12(a)(3)(iv).

¹⁰ 33 C.F.R. § 325.3(a).

¹¹ 33 C.F.R. §325.3(a).

¹² 33 CFR 325.2(a)(2).

¹³ 33 U.S.C. § 1251(e).

Project Changes since the Release of the Draft EIS

Despite having two decades to prepare for the permitting process, Pebble Limited Partnership (PLP) has revised its original permit application multiple times and in fundamental ways. PLP has changed everything from the amount of ore it proposes to mine, to its tailings facilities designs, to the proposed locations of transportation and utility infrastructure.

A significant number of PLP's project changes and new plans and new permit applications *occurred after the Draft EIS was released for public review and input*, leaving other agencies, tribes, organizations, and the public confused regarding PLP's proposed project and environmental effects.

Chronology of Pebble Project Changes	
December 2017	PLP submits its <u>first Project Description</u> and <u>first 404 Permit Application</u>
April 1, 2018	NEPA scoping begins
May 2018	Mid-scoping, PLP amends its project plans with <u>5 significant changes</u> , increasing the amount of ore it plans to mine by 25% and significantly changing its tailings facility design
June 29, 2018	NEPA scoping ends
October 2018	PLP submits its <u>second Project Description</u> to the Army Corps
December 2018	PLP submits its <u>third Project Description</u> to the Army Corps
January 2019	PLP submits its <u>first revised 404 permit application</u> to the Army Corps
February 20, 2019	Draft EIS is released
July 1, 2019	Comment period on Draft EIS closes
August 2019	Post- Draft EIS, PLP amends its project plans with <u>13 significant changes</u> . See <i>attached maps for illustration of some of these changes</i> .
July-December 2019	PLP supplements its proposal with new data, analysis, and plans
October 2019	PLP submits its <u>permit application to BSEE</u> for its 104-mile subsea pipeline
December 2019	PLP submits its <u>fourth Project Description</u> to the Army Corps, including significantly changing its water treatment plans and increasing the quantity of water to be treated and managed by 40%
December 2019	PLP submits its <u>second revised 404 Permit Application</u> to the Army Corps, significantly altering its projected wetlands impacts and increasing its projected stream miles destroyed by 30%
December 2019	PLP submits its <u>bridge permit applications</u> to the US Coast Guard
Mid-2020	The Corps expects to issue its Record of Decision . The Corps plans no additional opportunity for public input.

One consequence of these project changes post-dating the Draft EIS is the public will not have an opportunity to review and comment on PLP's new proposal to treat 38 million gallons of water a day, an increase of 40% over its proposal in the Draft EIS, and how PLP's new proposal changes the public's consideration of alternatives under NEPA. Another example is that by failing to require PLP to submit its federal permit applications to BSEE and Coast Guard before issuing the Draft EIS, the Army Corps has not adequately assessed and disclosed the impacts from these project components in the Draft EIS, thus limiting the public's input on alternatives. As noted by the Coast Guard, failing to include information related to its permit applications in the Draft EIS has resulted in "no detailed discussion" of project impacts related to its authorities.¹

NEPA only functions to meet its purposes with the opportunity for meaningful public input. This point is underscored in the regulations which require agencies to "prepare supplements to [a draft EIS] if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts."² The regulations also state that an agency should revise and recirculate a draft EIS if it "is so inadequate as to preclude meaningful analysis."³

And yet, the Corps is not providing the public, including Alaskans and Bristol Bay stakeholders, with an opportunity to provide input on these fundamental post-Draft EIS project changes.

Underpinning these project changes is the fact that PLP has never produced an economic feasibility report to support its 20-year mine design, leading to substantial changes mid-permitting to the project engineering and amount of ore proposed to be mined. Without an economic feasibility report (produced by an independent engineer or geoscientist⁴) to support its current plan, changes to the project will definitely occur after the Final EIS.

PLP and its parent company admit as much, disclosing with the SEC just three months ago that its project design might still change:

- “Northern Dynasty, through the Pebble Partnership, also continues to advance engineering studies. Northern Dynasty cautions that the current Project Description may not be the ultimate development plan for the Pebble Project and that a final project design has not been selected”⁵
- “the Company cautions that the plan described above may not be the final development plan. A final development design has not yet been selected.”⁶
- “The proposed project uses a portion of the currently estimated Pebble mineral resources. This does not preclude development of additional resources in other phases of the project in the future ...”⁷
- “There can be no assurance that any future economic or technical assessments undertaken by the Company with respect to the Pebble Project will demonstrate positive economics or feasibility.”⁸

Furthermore, as the State of Alaska recently stated, Pebble “will undoubtedly change, perhaps significantly so,” during the State permitting process.⁹

PLP must seek more than 60 approvals and permits from State of Alaska agencies such as DNR, Fish & Game, and DEC. These permit applications would require PLP to submit very detailed project engineering and would require additional field work on issues ranging from fish habitat to advanced dam design to additional groundwater analysis to more specific plans related to mitigation, reclamation, and remediation. To date, PLP has not submitted a single application to these agencies, resulting in only a general, qualitative approach to these important issues in the EIS.

Relatedly, expert reviewers of the Draft EIS such as the EPA, State of Alaska, and Department of Interior criticized the Draft as too heavily reliant on conceptual rather than real design plans, with the Department of Interior adding that it was so deficient that it “precludes meaningful analysis.”¹⁰

The Corps is not providing the public, including Alaskans and Bristol Bay stakeholders, with an opportunity to provide input on these fundamental post-Draft EIS project changes, and neither is it waiting for State permitting so that it can perform a truly comprehensive review of Pebble based on actual project details and not just concepts. Simply put, common sense and the law require that the Army Corps prepare and re-circulate a new Draft EIS and it should do so once PLP has submitted the State permit applications.

¹ Letter from U.S. Coast Guard to Army Corps (Oct. 17, 2019), available at <https://pebbleprojecteis.com/files/b663c232-cef5-4b98-91ff-eb9051d9ee81>.

² 40 C.F.R. § 1502.9(c)(1)(ii).

³ 40 C.F.R. § 1502.9(a).

⁴ Under Canadian Securities Law National Instrument 43-101, the economic feasibility report must be authored by an independent “qualified person,” defined as an engineer or geoscientist.

⁵ Northern Dynasty Minerals Ltd., Management’s Discussion and Analysis Three and Nine Months Ended September 30, 2019 (filed with the SEC on Nov. 22, 2019), at page 7, available at:

<https://www.sec.gov/Archives/edgar/data/1164771/000149315219018260/ex99-2.htm>.

⁶ *Id.* at page 9.

⁷ *Id.*

⁸ *Id.* at page 27.

⁹ State of Alaska’s Motion to Intervene, *Bristol Bay Economic Development Corporation, v. Hladick*, (3:19-cv-00265), filed February 8, 2020, page 18. <https://www.courtlistener.com/recap/gov.uscourts.akd.62717/gov.uscourts.akd.62717.51.0.pdf>

¹⁰ DOI letter to Army Corps (July 1, 2019), p.3, available at <https://pebbleprojecteis.com/files/3a2302b2-830b-43e8-8339-61b71a76d054>.

New Information Submitted by PLP after the Draft EIS

Since the release of the Draft EIS on February 20, 2019, PLP has submitted responses to more than 150 new Requests for Information (RFIs) containing late data, new reports, new modeling, new analysis, and new and revised federal permit applications to be used in the Final EIS and permit decision. In addition, the Army Corps has added more than 500 new documents to the project website. In total, there are more than 45,000 pages of new, post-Draft EIS project documents that undoubtedly contain more information of vital interest to Bristol Bay and its stakeholders. Contrary to common sense and the law, the Army Corps is not providing the public with an opportunity to review and comment on the adequacy and accuracy of this large body of new information and the changes in the mine proposal and impacts that it includes.

One example of how this new information has changed the impacts of PLP's proposal is the Corps now identifies a 25% increase in miles of streams permanently lost from mine construction (105.6 now, vs 81.1 in Draft EIS). The public has not had the opportunity to provide input on the adequacy and accuracy of PLP's updated analysis and field data, or how these impacts should influence the selection of project alternatives.

In another example, after the release of the Draft EIS, PLP contracted with BGC Engineering Inc. and Knight Piésold—two of the three engineering consulting firms behind the failed Mt. Polley tailings dam design—to author **30 new reports related to PLP's tailings dam design and water management**. PLP's submission of these reports and new analysis after the Draft EIS, coupled with the Corps' refusal to revise or supplement the Draft EIS, means that the public will not have an opportunity to review and comment on the adequacy and accuracy of this body of new information or weigh in on the proposed alternatives in light of new information. Not only is this improper, but it stands in stark contrast to the PLP CEO's post-Mt. Polley disaster broken commitment to "submit the engineering design for the project's tailings storage facility to an independent review prior to initiating permitting."

New Data, Pebble Reports and Plans, Modeling, Analysis, and Permit Applications Submitted after the Pebble Draft EIS		
	Date Submitted	Location to View
<i>New and Revised Permit Applications</i>		
Revised Clean Water Act 404 Permit Application	January 2020	Pebble EIS Website
New Permit Applications to Coast Guard for Bridges	December 2019	Pebble EIS Website
New Permit Application to BSEE for Marine Pipeline	October 2019	only available via FOIA
<i>New Project Plans</i>		
Revised Compensatory Mitigation Plan	January 2020	RFI 056a
Revised Pebble Project Description	December 2019	Pebble EIS Website
New Monitoring and Adaptive Management Plan	December 2019	RFI 135
Cook Inlet Pipeline Design, Installation, Maintenance	December 2019	RFI BSEE 1; RFI BSEE 2
Revised Water Treatment Plant Engineering Plan	November 2019	RFI 021e; new Project Description
New Conceptual Fugitive Dust Control Plan	September 2019	RFI 134
New Invasive Species Management Plan	August 2019	RFI 133
New Spill Prevention Operational Measures	July 2019	RFI 126
New Report on Bridge Designs & Stream Crossings	July 2019	RFI 157; RFI 118
New Reclamation and Closure Plan	July 2019	RFI 115
New Restoration Plan	June 2019	RFI 123
<i>Newly-Developed Models, New Modeling and Analysis</i>		
New Water Quality Modeling	December 2019	RFI 021g
New Surface and Ground Dewatering Model	Oct.-Nov. 2019	RFI 082a; RFI 082b; RFI 109k
New Streamflow Estimates	December 2019	RFI 109f
New Groundwater Model; New Aquifer Mapping	May-June 2019	RFI 109d; RFI 109e; RFI 109g; RFI 109h
New Water Temperature Modeling	November 2019	RFI 145
New Air Quality Dust & Copper Dispersion Modeling	June & Sept. 2019	RFI 009b; RFI 137; RFI 141
New Analysis on Seismic Modeling & Embankments	July & Sept. 2019	RFI 008g; RFI 008h
Revised Wetlands Jurisdictional Determinations	November 2019	Pebble EIS Website; RFI 116a
Revised Fish Habitat Modeling	October 2019	RFI 149; RFI 147
New Port Wave Modeling	December 2019	RFI 039b
<i>New 2019 Field Data</i>		
2019 Marine Wildlife Surveys	December 2019	Pebble EIS Website
2019 Wetlands Mapping Report for Alternatives 2 & 3	November 2019	RFI 116a
2019 Fieldwork Data for Cultural Resources	Fall 2019	RFI 117; RFI 25b; RFI 97a
2019 Cook Inlet Geotechnical & Reconnaissance	October 2019	Pebble EIS Website

February 24, 2020

Critical Data, Missing Detailed Plans, and Analysis that PLP has Yet to Provide

Despite the body of new information and project changes post-dating the Draft EIS, PLP's responses to the Army Corps' requests for more information contain many self-admitted gaps. Some of these gaps are identified in the chart below.

As one example, two months ago an internal memo authored by engineers at the EIS third party contractor AECOM warned of the risks to the tailings facility integrity without additional field data and testing:

testing completed to date on the bulk tailings has been minimal. [...] Thus, the summary of expected particle size sorting behavior [...] in the RFI response [from PLP] is incomplete and misleading. [...] **The ability to operate as a flow-through drained facility can only be confirmed with Pebble-specific tailings testing** [...] We remain concerned that there are uncertainties as to whether the 55 percent thickened tailings planned by PLP would segregate enough to promote reduction of the phreatic surface near the embankment, which translates to uncertainties regarding the effect of tailings segregation on embankment stability.¹

Despite these gaps, the Corps is charging ahead on a mid-2020 Final EIS and subsequent Record of Decision schedule.² The Corps' rigid adherence to an expedited schedule does not afford it the time to get the information or for public input on the consequences of proceeding without it, which include heightened risks associated with allowing these gaps to remain unfilled in the federal permitting process. Robust scientific analysis in the context of such large gaps requires more than one round of review and input from experts and is a necessary step to ensure scientific and public integrity for the Army Corps' environmental impact statement.

Examples of Critical Data, Missing Detailed Plans, and Analysis that PLP has Yet to Provide	
Groundwater Data	In 2020, PLP plans to conduct "pump tests to confirm groundwater characteristics" at the mine site. - <u>NDM 2019 Q3 Financial Report (filed with SEC)</u>
Geotechnical Field Work	"The tailings testing program, which is expected to be completed during the preliminary design phase of the Alaska Dam Safety Program, will include index testing to enable geotechnical classification of the materials, slurry settling, air drying, consolidation and permeability testing to determine the characteristics the tailings. This testing will occur under a range of conditions to be representative of expected field conditions. Results from this testwork will be used to validate the sensitivity analyses and material parameters used in the seepage analysis completed to date." - <u>PLP response to RFI 008h (Sept. 20, 2019)</u>
	"Site-specific tailings testwork will be completed to support the preliminary design phase of the ADSP. Results from this testwork will be used to validate the material parameters, and if required, update the liquefaction analysis and embankment design during the preliminary and detailed design phases. The testwork will include index testing to enable geotechnical classification of the materials, slurry settling, air drying, consolidation and permeability testing, and strength testing to determine the characteristics the tailings." - <u>PLP response to RFI 008h (Sept. 20, 2019)</u>
	"PLP is not proposing to finalize the 2018 geotechnical fieldwork report until after additional monitoring data for the holes drilled has been collected." - <u>PLP response to RFI 009g (June 10, 2019)</u>



Advanced Dam Design and Embankment Stability Analysis	<p>“The design of the embankment structures, including detailed stability analyses will be completed as per the design requirements outlined in the ADSP.”</p> <p>- PLP response to RFI 008h (Sept. 20, 2019)</p>
	<p>“Development of the embankment design, construction, and management during operations will be completed based on the ADSP program guidelines for a Class 1 embankment. Ongoing evaluations of the design criteria and concepts will be completed throughout the preliminary and detailed design phase and will be updated based on information gathered during future studies.”</p> <p>- PLP response to RFI 008h (Sept. 20, 2019)</p>
	<p>“As part of the preliminary and detailed design phases of the ADSP, a detailed stability analysis will be completed and updated as required.”</p> <p>- PLP response to RFI 008h (Sept. 20, 2019)</p>
	<p>“The stability analysis will be updated on an ongoing basis as the preliminary and detailed design phases of the ADSP are advanced.”</p> <p>- PLP response to RFI 008h (Sept. 20, 2019)</p>
Open Pit Water Management Pond Design	<p>“Potentially weak foundation materials or conditions identified during future site investigations or during the construction of the Open Pit Water Management Pond would be mitigated for by the removal of any unsuitable materials. In addition to the removal of these materials the downstream slope of the embankment may be flattened as part of the detailed design. Detailed stability analysis will be completed during the ADSP preliminary and detailed design stages with updated foundation conditions and associated material parameters as determined during future site investigation programs.”</p> <p>- PLP Response to RFI 014b (Aug. 12, 2019)</p>
Tailings Facility Drains	<p>“The locations of these drains are to be determined...”</p> <p>- PLP consultant response to RFI 109e (July 25, 2019)</p>
	<p>“details of drainage systems (e.g., ditches, underdrains) were not available for consideration and representation in the BGC numerical model.”</p> <p>- PLP consultant response to RFI 109d (May 24, 2019)</p>
Fish Surveys, Culverts and Bridges, Road Design, and Hydrology	<p>“[H]ydrologic and initial hydraulic analyses were conducted for thirteen potential crossing sites, using concept bridge geometries. [...] The hydraulic analyses will need to be updated when bridge designs are finalized.”</p> <p>- PLP consultant response to RFI 118 (July 2019)</p>
Reclamation Financial Assurances and Bond	<p>“Prior to commencing construction, the project Reclamation and Closure Plan approval and associated financial assurance mechanisms will need to be in place. [...] A detailed reclamation and closure cost model will be developed to address all costs required for both the physical closure of the project and the funding of long-term post-closure monitoring, water treatment, and site maintenance.”</p> <p>- PLP response to RFI 115 (July 2019)</p>
Reclamation and Closure Plan	<p>“Revisions to this Plan will be made to address changes in the design, construction, operations ... “</p> <p>- PLP response to RFI 115 (July 2019)</p>

¹ AECOM, Technical Memorandum to Bill Craig, AECOM (Dec. 13, 2019), Pebble Project EIS – Bulk TSF Embankment Seismic Stability Analysis, at pp. 1-2, available at <https://pebbleprojecteis.com/files/86882482-1f9a-4846-8fa5-354c4f5a8230>.

² <https://pebbleprojecteis.com/schedule>.

The Tailings Dam Failure Example

The Army Corps recently stated that it will not be conducting a full tailings failure scenario for the proposed Pebble Mine because (1) it “determin[ed] that a tailings dam breach would be a worst-case scenario and NEPA did not require assessing the impacts of it” and (2) “What this applicant is proposing are thickened tailings” that presumably are less subject to catastrophic failure.¹

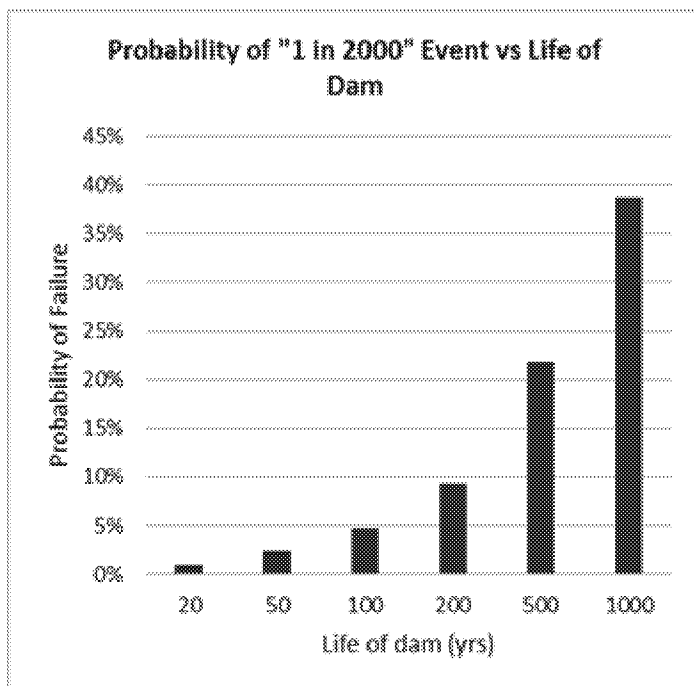
The Corps’ decision not to do a failure scenario does not hold up to the science and the facts behind what PLP is proposing and is wrong on the law. It also ignores the fundamental yet missing information necessary for understanding, much less analyzing, PLP’s tailings dam proposals.

In a 2019 meeting with cooperating agencies about the tailings failure analysis, the State of Alaska, Lake and Peninsula Borough, Fish and Wildlife Service, and EPA all expressed concerns over the Corps’ refusal to analyze tailings dam failures and its impact on the public’s understanding of the risks of PLP’s proposal. According to notes from that meeting, the Corps at that point asked AECOM, the third-party contractor, how long such an analysis would take. AECOM responded that the analysis would take “several months.” The Corps asked no other questions.²

As requested by the cooperating agencies and the people of Bristol Bay, the Army Corps should conduct a full tailings failure analysis on all of PLP’s proposed embankments. This is the only way to properly analyze and understand the impacts of the project, inform the public on what is being proposed for the headwaters of Bristol Bay, and allow the public the legally-required meaningful opportunity for input into the Corps’ decision process.

The Law – Reasonably Foreseeable vs. Worst-Case Scenario

Whether a catastrophic event is a worst-case scenario or not is not the appropriate standard for refusing to evaluate such a tailings dam failure in the context of Pebble. NEPA requires the agency to analyze impacts that are “reasonably foreseeable” if the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.³ As the Ninth Circuit has established, low probability events must be assessed unless they are “remote and highly speculative.”⁴ Neither of which is true here.



As EPA stated in its comments on the Draft EIS: “given the occurrence of multiple large-scale tailings dam releases in recent years at modern operating mine facilities, the possibility of a dam breach may not be too remote and speculative.”

Indeed, using the estimated annual probability of a tailings dam failure of approximately 1 in 2000⁵ the probability of a dam failure over the life of a dam approaches 5% at 100 years of dam life, and skyrockets higher from there. For a project proposing **7 major dams in a seismically-active region**, the probability of a failure is reasonably foreseeable and must be analyzed in an EIS.

The Science and the Facts for What Pebble is Proposing— 7 Major Embankments & Associated Missing Information and Agency Concerns

	Embankment(s)	Contents	Examples of Gaps & Agency Concerns Unaddressed
Bulk Tailings Storage Facility (TSF)	<u>Two Embankments:</u> Main = 545 feet South = 300 feet	1.14 billion tons of bulk tailings proposed “thickened tailings” and flow-through dam design	Agency/AECOM Concerns <ul style="list-style-type: none"> • <u>EPA</u>: support for no failure analysis of bulk TSF “is limited given the simplified conceptual dam designs, lack of operational, monitoring, and closure plans and lack of representative seismic analysis for the bulk TSF.” - EPA comments (July 1, 2019) • <u>SOA/DNR</u>: “With PLP’s currently limited dam design, do we have enough information to do a FMEA [Failure Modes Effect Analysis]?” - cooperating agency meeting notes (Aug. 1, 2018) • <u>SOA/DNR</u>: “concerned about deferral of spill responsibility to [SOA] Dam Permitting Process where an inundation analysis would occur but a full breach analysis will not be conducted.” - cooperating agency meeting notes (Nov. 18, 2019) • <u>AECOM</u>: explanation of no dam failure analysis for Main WMP despite agency requests: “unable to evaluate failure of WMP as there are no comparable for a lined WMP [sic] of this size.” - cooperating agency meeting notes (Nov. 18, 2019) • <u>Lake and Pen</u>: “could existing models be used for worst case scenario? Also notes that public has limited understanding of the different types of dams involved” - cooperating agency meeting notes (Nov. 18, 2019) • <u>EPA</u>: Minimal information regarding the design of the seepage collection system is provided in the EIS and therefore, it cannot be assumed that it would be effective in preventing groundwater contamination. We recommend that either a double-liner be considered [for the Pyritic TSF and Main WMP], or additional information be provided regarding the seepage collection system.” - EPA comments (July 1, 2019)
Pyritic Tailings Storage Facility (TSF)	<u>Three Embankments:</u> North = 335 feet South = 215 feet East = 225 feet	155 million tons of potentially acid generating tailings and slurry water; waste sludge from water treatment	
Water Management Ponds (WMPs)	<u>Main WMP One Embankment:</u> Main = 190 feet <u>Open Pit WMP One Embankment:</u> Main = 100 feet	18.33 billion gallons of untreated excess and contact water in the Main WMP	PLP Responses <ul style="list-style-type: none"> • <u>PLP</u>: In 2020, PLP plans to conduct “pump tests to confirm groundwater characteristics” at the mine site. - NDM 2019 Q3 Financial Report (filed with SEC) • <u>PLP</u>: “The tailings testing program, which is expected to be completed during the preliminary design phase of the Alaska Dam Safety Program [ADSP], will include [field testing] to determine the characteristics [of] the tailings.” - PLP response to RFI 006c (Aug. 12, 2019) • <u>PLP</u>: “Development of the embankment design, construction, and management during operations will be completed based on the ADSP program guidelines [...]. Ongoing evaluations of the design criteria and concepts will be completed throughout the preliminary and detailed design phase and will be updated based on information gathered during future studies.” - PLP response to RFI 008h (Sept. 20, 2019) • <u>PLP</u>: “A tailings deposition plan, to be included in the operations, maintenance and surveillance (OMS) manual, will be completed prior to operations. PLP response to RFI 006c (Aug. 12, 2019) • <u>PLP</u>: “The condition of the competent bedrock will be evaluated during site investigations to confirm material strength...” - PLP response to RFI 006c (Aug. 12, 2019)

The Corps' states that the flow-through nature of the dam design obviates the need for a failure analysis, meaning that such a design is so safe and well-established as to make failure not reasonably foreseeable. Yet, the Corps' own contractor raised fundamental, unanswered questions about the behavior of both the thickened tailings and the "flow-through design," details of both of which are necessary to determine if a tailings failure has been appropriately addressed and mitigated. In December 2019, an internal memo authored by engineers at the EIS third party contractor AECOM warned of the risks of PLP's tailings facility integrity without additional field data and testing, stating:

testing completed to date on the bulk tailings has been minimal. [...] Thus, the summary of expected particle size sorting behavior [...] in the RFI response [from PLP] is incomplete and misleading. [...] **The ability to operate as a flow-through drained facility can only be confirmed with Pebble-specific tailings testing [...]** We remain concerned that there are uncertainties as to whether the 55 percent thickened tailings planned by PLP would segregate enough to promote reduction of the phreatic surface near the embankment, which translates to uncertainties regarding the effect of tailings segregation on embankment stability.

[...]

There is concern that some and perhaps all of the entire centerline part of the bulk TSF main embankment (not just the uppermost raise) could slide into potentially undrained tailings and have consequent effects in a downstream direction.⁶

In other words, despite both PLP and the Corps publicly stating that all the engineering issues surrounding the tailings facility have been resolved, the Corps' own contractors are still expressing fundamental concerns about how the tailings themselves, and the tailings dam itself, would behave. If the thickened tailings do not "segregate enough to promote reduction of the phreatic surface near the embankment" (i.e., "drain") and the "flow through drained facility" does not operate as PLP's conceptual-level-only design says it will, then the tailings could remain saturated throughout operations and beyond. This would mean that a tailings dam failure could be a nearly perpetual risk for the Bristol Bay watershed.

The Corps either needs to do the tailings failure scenario with the limited information it has, or hold up on its permit process until PLP applies for State of Alaska permits and provides the missing information. Under any scenario, the Corps must do a new Draft EIS to allow for public review and input.

¹ KTUU, Pebble Update: Why the Army Corps says Final EIS won't analyze a tailings dam failure (Jan. 21, 2020), <https://www.ktuu.com/content/news/Pebble-Mine-Final-EIS-wont-analyze-tailings-dam-failure-Army-Corps-of-Engineers-says-567173171.html>.

² Cooperating Agency Technical Meeting Notes (Nov. 18, 2019), at pp. 3-4, available at <https://pebbleprojecteis.com/files/bd3bc973-95eb-4afd-8244-ab9969adbd8e>.

³ 40 C.F.R. § 1502.22.

⁴ See e.g., *San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016, 1031 (9th Cir. 2006).

⁵ Draft EIS (2019), see also Davies, M. P. (2002). Tailings Impoundment Failures Are Geotechnical Engineers Listening?. *GEOTECHNICAL NEWS-VANCOUVER*, 20(3), 31-36. Chambers, D. M., & Higman, B. (2011). Long term risks of tailings dam failure. *Center for Science in Public Participation, Bozeman, Montana*.

⁶ AECOM, Technical Memorandum to Bill Craig, AECOM (Dec. 13, 2019), Pebble Project EIS – Bulk TSF Embankment Seismic Stability Analysis, at pp. 1-2, available at <https://pebbleprojecteis.com/files/86882482-1f9a-4846-8fa5-354c4f5a8230> (emphasis added).

The Role of State Permitting to Provide Comprehensive Review

As part of its mine proposal, Pebble Limited Partnership (PLP) proposes to construct, maintain and operate multiple complex facilities, including massive tailings dams and an unprecedented, untested mine wastewater management program to be operated in perpetuity. PLP in many instances has refused to provide detailed engineering information to the Corps of Engineers, instead providing only “concept-level designs.” PLP states that it will provide this information in the State of Alaska permitting process, which it, in turn, serially defers initiating.¹ In the absence of PLP otherwise providing the detailed information, the Corps can and should suspend its Clean Water Act permitting process pending receipt of the necessary information from a state permitting process.

For reasons of effectiveness and efficiency, Alaska encourages mine developers to utilize its inter-disciplinary and inter-jurisdictional Large Mine Permitting Team. Doing so synchronizes and coordinates state and federal permit applications “to provide relevant information to the public in a transparent, understandable way and offer productive means for citizens to provide their input.”² This approach is based on a strong dose of common sense. As the State recently said, any project like Pebble that is “initially proposed by an applicant will undoubtedly change, perhaps significantly so,”³ during the State permitting process.

Also, as reflected by its absence from the Corps’ project file, PLP has not provided the Corps with either preliminary or detailed tailings dam engineering designs, much less an independent review of the dam designs.

The missing information is fundamental to understanding and evaluating risks of the dam design, and includes basic geotechnical field work, site-specific tailings modeling and evaluation, and a stability analysis.⁴ Among others, the contractor paid for by PLP to prepare the EIS for the Corps (AECOM) has expressed deep concerns about proceeding without this information:

[PLP’s information] is incomplete and misleading. [...] **The ability to operate as a flow-through drained facility can only be confirmed with Pebble-specific tailings testing [...] We remain concerned that there are uncertainties as to whether the 55 percent thickened tailings planned by PLP would [actually work as PLP proposes].**⁵

In the context of other proposed mines in Alaska, the Corps has put the federal process on hold pending further information from state permitting.⁶ With respect to Pebble, however, the Corps has identified no rational, much less compelling, reason for its rush to a final permit decision.

¹ PLP recently pushed back the filing of any state permit application from 2019 to “late 2020.” PLP’s parent company Northern Dynasty Mineral’s Corporate Presentation (Feb. 2020), page 14, available at: <https://www.northerndynastyminerals.com/investors/presentations/> (showing timeline of permitting actions with state permitting beginning late 2020).

² <http://dnr.alaska.gov/mlw/mining/largemine/Permitting-Large-Projects-in-Alaska-2018.pdf>

³ State of Alaska’s Motion to Intervene, *Bristol Bay Economic Development Corporation, v. Hladick*, (3:19-cv-00265), filed February 8, 2020, page 18. <https://www.courtlistener.com/recap/gov.uscourts.akd.62717/gov.uscourts.akd.62717.51.0.pdf>.

⁴ See PLP response to RFI 008h (Sept. 20, 2019)

⁵ AECOM, Technical Memorandum to Bill Craig, AECOM (Dec. 13, 2019), Pebble Project EIS – Bulk TSF Embankment Seismic Stability Analysis, at pp. 1-2, available at <https://pebbleprojecteis.com/files/86882482-1f9a-4846-8fa5-354c4f5a8230> (emphasis added).

⁶ Peninsula Clarion, PacRim coal mine permitting suspension leaves some simmering debate (April 11, 2017), <https://www.peninsulaclarion.com/news/pacrim-coal-mine-permitting-suspension-leaves-some-simmering-debate/> (“The lead federal permitting agency, the Army Corps of Engineers, had stopped considering PacRim’s applications in November 2016 because the applications had ‘insufficient information necessary to allow for informed public comment and the Corps’ review of the proposed discharges,’ according to the Corps’ statement.”).

